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DISCOVERIES AND CURRENT EVENTS *

Brazil: Preliminary List of Diseases of Plants in the State of Minas Geraes (1).

Minas Geraes, which is the fifth largest State in Brazil, covers an area of 593.810 km² and is situated between the 14th and 23rd degree of latitude and the 40th and 51st degree of longitude. There is a great diversity of climatic conditions and a great variety of cultivations in this vast territory. In proof of this it is enough to state that the production of maize, beans and wheat have attained an importance equal to that of sugar-cane, coffee and cotton, which are tropical crops.

Since 1929, among the principal activities of the Phytopathological Section of the Higher School of Agriculture and Veterinary Science of this State, there has been included the study of diseases which attack cultivated plants also the institution of a mycological herbarium.

Previously to this there did not exist any laboratory in this State which was devoted exclusively to the study of plant diseases and the existence of any kind of mycological herbarium was not contemplated.

The present list has been compiled as a contribution to the study of the distribution of plant diseases in South America, and new information is given on many of the fungi mentioned and on their distribution throughout the world.

I. — Field Crops.

Medicago sativa:

Uromyces medicaginis Pass.

Gossypium spp.:

Colletotrichum gossypii South.
Kuehneola gossypii (Lagerh.) Arth.
Macrosporium nigricans (Atk.) Sacc.
Rhizoctonia solani Kühn
Septocylindrium areola (Atk.) P. et C.
Verticillium albo-atrum R. et B.

Arachis hypogaea:

Cercospora personata (B. et C.) Ell.
Sclerotium rolfsii Sacc.

* Under this and the next heading the countries are arranged in French alphabetical order.

(1) Communication from Mr. Albert S. Müller, Professor of Phytopathology, Higher School of Agriculture and Veterinary Science, State of Minas Geraes, Viçosa, transmitted to the International Institute of Agriculture by Mr. J. C. Belo Lisbôa, Director of the above mentioned School.

Oryza sativa:

Cercospora oryzae Miy.
Helminthosporium oryzae v. B. H.
Piricularia oryzae Cav.
Ophiobolus cariceti (B. et Br.) Sacc.

Avena sativa:

Helminthosporium avenae Eid.
Gibberella saubinetii (Mont.) Sacc.
Puccinia coronata Cda.
Ustilago avenae (Pers.) Jens.

Ipomoea batatas:

Albugo ipomoeae-panduranae (Schw.) Sev.
Cercospora cordobensis Speg.
Phyllosticta batatas Thüm.
Rhizopus nigricans Ehrenb.
Monilochaetes infuscans E. et H.

Solanum tuberosum:

Actinomyces scabies (Thaxt.) Güssow
Alternaria solani (E. et M.) J. et Gr.
Bacillus carotovorus Jones
Cercospora solanicola Atk.
Fusarium spp.
Leaf curl (virus disease)
Mosaic (virus disease)
Phytophthora infestans (Mont.) de By.
Verticillium albo-atrum R. et B.

Coffea arabica:

Cercospora coffeicola B. et C.
Colletotrichum coffeanum Noack
Heterodera radicicola Greef

Saccharum officinarum:

Bacterium sp.
Cercospora longipes Butl.
Colletotrichum falcatum Went.
Fusarium moniliforme Sheld.
Helminthosporium sacchari Butl.
Leptosphaeria sacchari v. B. de H.
Melanconium sacchari Mass.
Mosaic (virus disease)
Sclerotium rolfsii Sacc.

Hordeum vulgare:

Helminthosporium sp.
Gibberella saubinetii (Mont.) Sacc.

Thea sinensis:

Colletotrichum camelliae Mass.
Pestalozzia theae Saw.
Rosellinia necatrix (Hart.) Berl.

Vigna sinensis:

Ascochyta pisi Lib.
Cercospora cruenta Sacc.
Mosaic (virus disease).
Phyllosticta phaseolina Sacc.

Phaseolus vulgaris:

Alternaria brassicae Sacc.
Cercospora canescens E. et M.
Cercospora columnaris E. et E.
Colletotrichum lindemuthianum (S. et M.) B. et C.
Oidium sp. (*Erysiphe polygoni* DC.)
Phyllosticta phaseolina Sacc.
Ramularia sp.
Rhizoctonia solani Kühn
Rhizoctonia microsclerotia Matz
Sclerotium rolfsii Sacc.
Uromyces appendiculatus (Pers.) Lév.
Mosaic (virus disease)
Heterodera radicicola Greef

Canavalia ensiformis:

Ascochyta pisi Lib.
Cercospora canavaliae H. et P. Syd.
Oidium sp. (*Erysiphe polygoni* DC.)

Glycine max:

Bacterium sojae Wolf
Colletotrichum sp.
Heterodera radicicola Greef
Mosaic (virus disease)

Nicotiana tabacum:

Bacterium tabacum W. et F.
Cercospora nicotianae E. et E.
Mosaic (virus disease)
Pythium debaryanum Hesse

Rhizoctonia solani Kühn
Ringspot (virus disease)

Sesamum indicum:

Cercospora sesami Zimm.
Helminthosporium sesami Miy.

Helianthus annuus:

Clasterosporium mullerii Putt.
Bacillus carotovorus Jones

Ricinus communis:

Cercospora ricinella Sacc. et B.

Manihot spp.:

Cercospora caribaea Ciferri
Cercospora henningsii Allesch.
Oidium manihotis Averna-Saccà
Rhizopus nigricans Ehrenb.
Mosaic (virus disease)

Zea mays:

Basisporium gallarum Moll.
Diplodia macrospora Earle
Diplodia zeae (Schw.) Lév.
Fusarium moniliforme Sheld.
Gibberella saubinetii (Mont.) Sacc.
Helminthosporium turcicum Pass.
Phoma zeicola E. et E.
Puccinia sorghi Schw.
Sorosporium reilianum (K.) McAlp.
Ustilago zeae (Beck.) Unger

Stizolobium deeringianum:

Aplanobacter stizolobii Wolf
Cercospora stizolobii H. et P. Syd.

Holcus sorghum:

Colletotrichum cereale Manns
Puccinia sp.
Helminthosporium turcicum Pass.
Sphacelotheca sorghi (Lk.) Clint.

Euchlaena mexicana:

Ustilago zeae (Beck.) Unger

Triticum spp.:

Gibberella saubinetii (Mont.) Sacc.
Helminthosporium sp.
Puccinia graminis Pers.
Ustilago tritici (Pers.) Jens.

II. — Vegetable Crops.

Cucurbita maxima:

Colletotrichum lagenarium (Pass.) E. et H.
Mycosphaerella citrullina (Sm.) Gross.
Oidium sp. (*Erysiphe cichoracearum* DC.)
Peronoplasmopara cubensis (B. et C.) Clint.
Mosaic (virus disease)

Beta vulgaris var. *cicla:*

Cercospora beticola Sacc.

Apium graveolens:

Cercospora apii Fres.

Cynara scolymus:

Cercospora grandissima Rangel

Lactuca sativa:

Botrytis vulgaris Fr.
Cercospora longissima Trav.
Rhizoctonia solani Kühn
Septoria lactucae Pass.

Allium sativum:

Sclerotium cepivorum B.

Allium porrum:

Macrosporium porri Ell.

Asparagus officinalis:

Cercospora caulicola Wint.

Solanum melongena:

Ascochyta lycopersici Brun.
Botrytis vulgaris Fr.
Colletotrichum atramentarium B. et B.) Taub.
Sclerotium rolfsii Sacc.
Septoria lycopersici Speg.
Verticillium albo-atrum R. et B.

Beta vulgaris:

Cercospora beticola Sacc.
Heterodera radicicola Greef

Dioscorea alata:

Colletotrichum dioscoreae Av.

Allium cepa:

Colletotrichum circinans (B.) Vogl.
Fusarium cepae (H.) W. et T.
Macrosporium porri Ell.
Sclerotium rolfsii Sacc.

Daucus carota:

Macrosporium carotae E. et E.

Brassica oleracea:

Alternaria brassicae (B.) Sacc.
Albugo candida (Pers.) Ktze.
Peronospora parasitica (Pers.) de By.
Rhizoctonia solani Kühn

Brassica pekinensis:

Bacillus carotovorus Jones
Macrosporium herculeum E. et M.

Brassica oleracea f. botrytis:

Alternaria brassicae (B.) Sacc.
Peronospora parasitica (Pers.) de By.

Pisum sativum:

Ascochyta pisi Lib.
Oidium sp. (*Erysiphe polygoni* DC.)
Phytophthora parasitica Dastur

Spinacia oleracea:

Cercospora beticola Sacc.

Cajanus cajan:

Colletotrichum cajani Rangel

Citrullus vulgaris:

Cercospora citrullina Cke.
Colletotrichum lagenarium (Pass.) E. et H.
Diplodia tubericola E. et E.
Peronoplasmopara cubensis (B. et C.) Clint.

Cucumis melo:

Colletotrichum lagenarium (Pass.) E. et H.
Cercospora cucurbitae E. et E.
Oidium sp. (*Erysiphe cichoraceae-rum* DC.)

Brassica rapa:

Bacillus carotovorus Jones
Macrosporium herculeum E. et M.

Cucumis sativus:

Oidium sp. (*Erysiphe cichoracearum* DC.)
Peronoplasmopara cubensis (B. et C.) Clint.

Capsicum frutescens:

Bacillus carotovorus Jones
Cercospora capsici H. et W.
Cercospora rigospora Atk.
Colletotrichum nigrum E. et H.
Phyllosticta capsici Speg.
Puccinia paulensis Rangel
Mosaic (virus disease)

Hibiscus esculentus:

Ascochyta abelmoschi H.
Bacillus carotovorus Jones
Cercospora hibisci Tr. et E.
Cercospora hibiscina E. et E.
Heterodera radicicola Greef
Oidium sp. (*Erysiphe cichoracearum* DC.)
Verticillium albo-atrum R. et B.

Raphanus sativus:

Cercospora bloxami B. et Br.
Macrosporium herculeum E. et M.

Brassica oleracea f. capitata:

Bacillus carotovorus Jones
Macrosporium herculeum E. et M.
Peronospora parasitica (Pers.) de By.
Rhizoctonia solani Kühn

Apium graveolens var. rapaceum:

Septoria apii (B. et C.) Chest.

Lycopersicum esculentum:

Bacillus carotovorus Jones
Colletotrichum phomoides (Sacc.) Chest.
Heterodera radicicola Greef
Phytophthora infestans (Mont.) de By.
Septoria lycopersici Speg.
Mosaic (virus disease)

Sechium edule:

Cercospora sechii Stevenson
Colletotrichum lagenarium (Pass.) E. et H.

III. — Fruit Trees and plants.

Persea americana:

Colletotrichum gloeosporioides Penz.
Diplodia cacaoicola P. Henn.
Oidium sp.
Rhizopus nigricans Ehrenb.

Ananas sativus:

Thielaviopsis paradoxa (de S.) v. H.

Prunus spp.:

Bacterium pruni E.F.S.
Gloeosporium fructigenum Berk.
Tranzschelia punctata (Pers.) Arth.

Eriobotrya japonica:

Phyllosticta eriobotryae Thüm.

Morus alba:

Septogloeum mori B. et Br.

Psidium araça:

Gloeosporium psidii Del.
Puccinia psidii Winter

Musa spp.:

Fusarium sp.
Gloeosporium musarum Cke. et Mass.
Microthyrium musarum Speg.
Rhizopus nigricans Ehrenb.

Rollinia deliciosa:

Colletotrichum sp.
Rhizopus nigricans Ehrenb.

Anacardium occidentale:

Cercospora anacardii C. et M.
Colletotrichum gloeosporioides Penz.
Oidium anacardii Noack

Marlierea edulis:

Uredo flavidula Wint.

Prunus spp.:

Bacterium pruni E.F.S.

Citrus spp.:

Alternaria citri Pierce
Ascochyta citri Penz.
Aspergillus niger v. Th.
Colletotrichum gloeosporioides Penz.
Colletotrichum limetticolum Claus.
Diplodia natalensis Ev.
Leptothyrium pomi (M. et F.) Sacc.
Oospora citri-aurantii Ferm.
Phytophthora parasitica Dast.
Phomopsis citri Fawc.
Sphaceloma fawcettii Jenk.
Septobasidium albidum Pat.
Penicillium digitatum Sacc.
Penicillium italicum Wh.

Eugenia praetiosa:

Colletotrichum gloeosporioides Penz.
Uredo flavidula Wint.

Ficus carica:

Cerotelium fici (Cast.) Arth.

Anona spp.:

Cercospora anonae C. et M.
Cercospora anonacea P. Henn.
Rhizopus nigricans Ehrenb.

Psidium guajava:

Gloeosporium psidii Del.
Puccinia psidii Winter

Myrciaria cauliflora:

Colletotrichum gloeosporioides Penz.
Uredo rochaei Putt.

Artocarpus integrifolia:

Colletotrichum artocarpi Del.

Eugenia jambos:

Uredo flavidula Wint.

Diospyros kaki:

Gloeosporium diospyri E. et E.

Pyrus malus:

Cercospora minima Tr. et E.
Gloeosporium fructigenum Berk.
Leptothyrium pomi (M. et F.) Sacc.
Physalospora cydoniae (P.) Sh.
Sphaeropsis malorum (B.) Sh.

Carica papaya:

Asperisporium caricae (Speg.) Maubl.
Colletotrichum papayae P. Henn.
Oidium caricae Noack.
Phyllosticta caricae-papayae Allesch.

Mangifera indica:

Botrytis cinerea Auct.
Colletotrichum gloeosporioides Penz.
Oidium mangiferae Averna-Saccà

Cydonia vulgaris:

Cercospora minima Tr. et E.
Gloeosporium fructigenum Berk.
Entomosporium maculatum Lév.
Sphaeropsis malorum (B.) Sh.

Amygdalus persica:

Bacterium pruni E.F.S.
Monilia fructigena Pers.
Tranzschelia punctata (Pers.) Arth.

Pyrus communis:

Gloeosporium fructigenum Berk.
Peziotrichum saccardianum Rangel

Punica granatum:

Cercospora punicae P. Henn.

Vitis spp.:

Cercospora viticola (Ces.) Sacc.
Gloeosporium ampelinum Cav.
Phoma uvicola Berk. et Curt.
Plasmopara viticola (Berk. et Curt.) Berl. et De Toni

Eritrea: Locusts (1).

Towards the end of July 1934 some swarms of locusts were seen in the Western Lowlands.

On the 25th a large swarm coming from the W. passed over Tessenei flying E.

On the 28th a few reddish locusts coming from Baria Heghir were reported at Tarchinà. They went towards Tocalai.

On the 29 th another swarm, extending over about a kilometre, coming from Gogni passed over Barentù in the direction of Suzenà.

The service of information and control has been extended.

(1) Communication from Dr. Luigi Massa, Acting Chief of the Agricultural Bureau of Eritrea, transmitted to the Institute by the Government of the Colony.

India : New Diseases Reported during the Year 1933 (1).

PUSA (Dr. W. McRae, Imperial Mycologist, Imperial Institute of Agricultural Research) :—

Oryza sativa	*Ephelis oryzae* Syd. from Dharwar.
	Sclerotium sp.
	Rhizoctonia sp.
	Rhizoctonia bataticola (Taub.) Butler (A type).
	Metasphaeria albescens v. Thüm. *celastrina* Syd. and Butl.
Avena sterilis (Indian oats)	*Ustilago avenae* (Pers.) Jens. known in India has been found to be *U. kolleri* Wille and the former is not very common.
Panicum frumentaceum	*Colletotrichum* sp.
Saccharum officinarum	*Thielaviopsis ethacetica* Went. with its perfect stage.
	Ceratostomella paradoxa (de Seynes) Dade from Coimbatore.
	Sclerotium rolfsii Sacc. from Talipa-ramba, Madras.
	Cercospora kopkei Krug. from Burma.
Hibiscus sabdariffa	*Colletotrichum* sp. and *Fusarium* sp. from stem affected with canker.
Tagetes patula	*Cercospora tageticola* Ell. and Ev.
Anona squamosa	*Pleosphaeropsis* sp.
Stizolobium sp.	*Cercospora stizolobi* Syd.
Pyrus malus	*Cytospora* sp., *Oidium* sp., *Alternaria* sp. — from Baluchistan
Prunus persica	*Alternaria* sp., *Coniothecium* sp., *Rhizopus* sp. — from Baluchistan
Amygdalus communis	*Oidiopsis* sp. and *Cytospora* sp. — from Baluchistan
Juglans sp.	*Cytospora* sp.

BOMBAY (Reported by Dr. M. K. Patel) :—

Trigonella foenum-graecum	*Peronospora trigonellae* Gaum.
Cannabis sativa	*Sclerotium rolfsii* Sacc.
Saccharum officinarum	*Leeina philippinensis* Petr.

(1) Communication from the official correspondent of the Institute, Mr. W. McRAE, M. A., D. Sc., F. L. S., Imperial Mycologist, Imperial Institute of Agricultural Research, Pusa, Bihar, India.

Commelina sp.	*Cercospora commelinae* Kal. and Cke.
Lathyrus odoratus	*Erysiphe polygoni* DC. and *Uromyces fabae* (Pers.) De Bary.
Momordica charantia	Mosaic.

CENTRAL PROVINCES (Reported by Mr. J. F. Dastur) :—

Capsicum annum	*Oidiopsis* sp. (Powdery mildew).
Lycopersicum esculentum	Spotted wilt.
	Mosaic.
Piper betel	*Gloeosporium* sp. This can be controlled by spraying with Bordeaux mixture or Bouisol.
Gossypium sp.	*Colletotrichum indicum*. Control measures found effective for considerably reducing the percentage of diseased seedlings from infected seeds are dusting the seed with uspulun or copper carbonate or delinting with sulphuric acid.
Citrus aurantium	*Phytophthora* sp. on fruits.
	Mottle-leaf or frenching.

PUNJAB (Reported by R. S. J. C. Luthra, Associate Professor of Botany, Lyallpur) :—

Arachis hypogaea	*Colletotrichum* sp.
Sesamum indicum	*Phoma* sp.

AHMEDABAD (Reported by S. L. Ajrekar, Professor of Botany) :—

Pennisetum typhoideum	Spore balls of *Tolyposporium penicillariae* Bref. lying about in the Bajri fields are the only source of infection and the flower is the only part of the host which is attacked by the parasite. No resting mycelium is formed in the infected grain as in the case of wheat smut. None of the ordinary methods of treatment used in dealing with other smut diseases can, therefore, be of any use in the case of Bajri smut.

MADRAS (Reported by Mr. S. Sundararaman Avl., Government Mycologist, Coimbatore) :—

Citrus sp. — An interesting disease of *Citrus* occurring on the Shevaroy hills (Salem District) was noticed. The symptoms are :— Gradual dwarfing and chlorosis of the leaves occurring in young and old trees. The veins and the narrow portion in the immediate vicinity of the veins remain normal green while the remaining portions of the leaf-lamina are chlorotic. Infected plants produce many small twigs which give a crowded appearance to the crown. Young affected plants do not come into bearing or bear a few under-sized fruits of poor quality. Sometimes affected plants flower earlier and more profusely than normal plants around them but these fruits are of poor size and quality. In old trees the disease is conspicuous after one or more years of heavy bearing. The twigs and branches die-back gradually leading to the death of the whole tree. The chemical analysis of diseased and healthy leaves collected side by side showed a marked defect in the calcium and magnesium contents in the former. Apparently, the disease is akin if not identical with mottled leaf, frenching or foliocellosis known to occur in Florida and California. A field experiment is now in progress to see whether the application of lime would remedy the disease.

Oryza sativa — *Fusarium moniliforme* var. *majus* causing 'foot-rot' of rice. The disease can be effectively prevented by the treatment of the seed with fungicides like uspulun, granosan, ceresan, copper sulphate and formalin.

Piper betel — *Phytophthora* sp. The application of Bordeaux mixture to the collar of the vines and to the soil immediately

around the plant prevents wilting of the vine which was responsible for the destruction of Betel gardens near the city of Madras.

AGRA (Reported by Dr. K. C. Mehta, Professor of Botany, Agra College, Agra) :—

Avena sativa — *Puccinia graminis avenae* Erikss. and Henn. (Black rust) at Anakorai near Ootacamund in the Nilgiris.

Southern Rhodesia: Locust Invasion, 1932-1934 (1).

Monthly Report No. 18. May, 1934.

Flying swarms of the Red Locust (*Nomadacris septemfasciata*) have been reported from most parts of the Colony during the month, but no record of the presence of the Tropical Migratory Locust (*Locusta migratoria migratorioides*) has been secured.

It should be stated that no swarms of locusts have been reported from the low veld of the Limpopo valley during May, but whether this indicates their absence or merely imperfect information is uncertain. The impression last year was that the swarms favoured the higher veld and to some extent the more humid portions of the Colony during the dry season.

During May the distribution of the swarms has extended from the eastern border to the westernmost district, namely, Wankie, and so includes a considerable range of humidity.

By far the majority of the swarms reported have been described as ' large ', ' very large ' or ' huge ', the biggest of which actual dimensions were given being stated to extend six (6) miles in width and twenty-five (25) miles in length. Some large swarms have been observed by the Entomological Staff near Salisbury during the last week of the month.

It cannot be said that the movement of the swarms has shown any outstanding tendency in a particular direction during May. There are indications that the swarms at this time tend to drift with the wind to a large extent, and that they may change direction immediately the wind changes. The winds on the whole have been very light during the month, especially during the latter half of the day when the swarms have most tendency to fly afield. The movements of the swarms in the circumstances have appeared to be more or less aimless and have certainly revealed no definite migratory impulse.

(1) Communnication from the official correspondent of the Institute, Mr. Rupert W. JACK, F.E.S., Chief Entomologist, Department of Agriculture, Salisbury, Southern Rhodesia.

Enemies and Disease.

During the earlier part of the month the locust fungus (*Empusa grylli*) was much in evidence, but the diseased locusts at the end of the month appeared mostly to have died off, and the disease to a large extent, to have subsided. This was anticipated with the advent of the dry season.

No concentrations of birds in any of the swarms bas been reported or observed.

Damage to Crops.

Comparatively little damage has been reported, as far as crops are concerned, but plantations of exotic trees have suffered, both from defoliation and breakage, due to the weight of the resting swarms.

Outlook.

The outlook remains as before, namely, the prevalence of winged swarms in the Colony throughout the present dry season.

LEGISLATIVE AND ADMINISTRATIVE MEASURES

Germany (Mecklenburg). — By Decree of 9 April 1934 the regulations concerning the sale of poisons used for the protection of plants have been modified.

This sale is confined to the official dispensaries of the Service for plant protection and to the agricultural cooperative Societies which have received special authorisation from the police in accord with the Health Service of the district. Applications for permission to sell should be addressed to the Centre for plant protection at Rostock. This Centre exercises a permanent control over sales and will have the right to demand a certain retribution. (*Amtliche Pflanzenschutzbestimmungen*, Berlin, 1. Mai 1934, Bd. VI, Nr. 2, S. 35).

Germany (Saxony). — On 6 April 1934 the Ministry of Economics has charged the police authorities with the close control of travelling traders in order to prevent them trading in nursery stock and seeds. Travelling traders and their agents who are guilty of this will be punished. (*Nachrichtenblatt für den Deutschen Pflanzenschutzdienst*, Berlin, Mai 1934, 14. Jahrg., Nr. 5, S. 55).

Argentina. — By Decision of the Council of Ministers No. 40772-673, dated 3 March 1934, a credit of a million ' pesos ' has been accorded to the Ministry of Agriculture for the purpose of the control of the South American locust, [*Schistocerca paranensis*]. (*Boletín Oficial de la República Argentina*, Buenos Aires, 28 de junio de 1934, año XLII, núm. 12.014, pág. 1157).

*** By Presidential Decree No. 43471-753, of 16 June 1934, it has been forbidden to use and transport the packing material known as ' cajón frutero de

retorno ' for expediting fresh fruit and vegetables destined for the provinces of Mendoza, San Juan and Córdoba or coming from these said provinces.

The transport of fresh fruit and vegetables destined for or coming from the above provinces should take place with the use of new packing material which should be used for one consignment only. This does not apply to fresh vegetables destined for or coming from these provinces which according to local customs, are transported in bulk, in bales or in bags. (*Ibid.*, 26 de junio de 1934, núm. 12.012, pág. 1066).

Australia (Western Australia). — On 7 June 1934 the Director of Agriculture announced that the Lieutenant-Governor in Executive Council approved the Bylaw for the destruction of the noxious weed known as ' Paddy Melon ' (*Cucumis myriocarpus*), made by the Wongan-Ballidu Road Board on 12 May 1934. (*Government Gazette of Western Australia*, Perth, June 8, 1934, No. 27, p. 840).

Austria. — By Decree No. 152 of 27 February 1934, the countries considered exempt from wart disease of potatoes [*Synchytrium endobioticum*] and which may import fresh tubers into the Republic of Austria by rail are as follows:— Egypt, Italy, Yugoslavia, Cyprus, Malta, Spain and Hungary. (*Bundesgesetzblatt für die Republik Österreich*, Wien, 13. März 1934, Jahrg. 1934, 46. Stück, S. 341).

Spain. — The presence of the banana weevil (*Cosmopolites sordidus*) having been ascertained in the Island of Madeira, an ' Orden ' of 28 May 1934 prohibits the introduction into the Canary Islands of plants or parts of plants of species of the genus *Musa*, whatever may be their place of origin.

It also totally prohibits the importation into the Canary Islands of all classes of living plants, straw and other products, residues of vegetable origin, such as trunks, roots, leaves, second hand stakes, etc. even if exported as wood for burning, coming from the Island of Madeira.

The introduction of plants of selected varieties for experiments and tests must be authorized by a special permit with guarantees established for each individual case. (*Gaceta de Madrid*, Madrid, 4 junio 1934, año CCLXXIII, tomo II, núm. 155, pág. 1516).

*** The ' Orden ' of 31 May 1934 lays down rules relative to the delivery of phytopathological or phytosanitary certificates. (*Ibid.*).

*** By an ' Orden ' of 14 August 1934, and with the purpose of preventing the introduction and propagation of San José scale (*Aspidiotus perniciosus*), the import into and transit through the territory of the Republic of all kinds of fresh fruits, living plants of and parts of living plants (buds, nursery stock etc.) originating in or coming from Portugal, Argentina, Brazil, Mexico and South Africa is prohibited from 16 August 1934. (*Gaceta de Madrid*, Madrid, 16 agosto 1934, año CCLXXIII, tomo III, núm. 228, pág. 1526).

France. — By Decree of 30 April 1934, published in the *Journal Officiel de la République Française* of 1 May 1934, the colonial chair of Plant Pathology created at the National Institute of Colonial Agronomy, Nogent-sur-Marne (Seine), by Decree of 9 November 1931 [see this *Bulletin* 1932, No. 2, p. 27], has been abolished as from 1 May 1934 and replaced by a Section of Plant Pathology under the charge of a 'chef de travaux' or a 'préparateur assistant' of the permanent staff of the above Institute. (*L'Agronomie Coloniale*, Paris, mai 1934, 23e année, nº 197, p. 154).

*** By a Ministerial Decree of 11 August 1934, the provisions of the Ministerial Decree of 17 January 1933, relating to the importation of seed potatoes, originating in and coming from Germany, are repealed. (Ministère de l'Agriculture. Direction de l'Agriculture. *Bulletin de l'Office de Renseignements Agricoles*, Paris, 15 août 1934, année 1934, nº 16, p. 368).

Italy. — The Ministerial Decree of 20 July 1934 determines the hunting season 1934-35 and contains other measures relative to that subject, among others the prohibition of the pursuit and capture of woodpeckers (green woodpecker [*Gecinus viridis*], spotted woodpeckers [*Dendrocopus major, D. medius, D. minor*], black woodpecker [*Picus martius*]), tits [*Parus*], chiffchaff and its relatives [*Phylloscopus*], Irby's long-tailed titmouse [*Aegithalus caudatus italiae*], penduline titmouse [*Remizus pendulinus*], golden-crested wren [*Regulus regulus*], fire-crested wren [*R. ignicapillus*], wren [*Anorthura troglodytes*], nightingale [*Aëdon luscinia*], redbreast [*Erithacus rubecola*]. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 31 luglio 1934, anno 75º, n. 178, pp. 3531-3532).

Lithuania (1). — A Law of 2 March 1934 referes to the control of contagious diseases and pests of plants.

Portugal. — The Decree-Law No. 23.939, of 31 May 1934, establishes rules and conditions for recruiting, in all agricultural districts of the Republic, persons able to eventually give their services for phytopathological inspection. (*Diário do Govêrno*, Lisboa, 31 de maio de 1934, I série, núm. 126, pág. 694).

Saar Basin. — A amendment bearing the date 7 March 1934 to the Ordinance No. 940/II I, of 5 April 1933 relative to the control of wart disease of potatoes [*Synchytrium endobioticum*] establishes that, with the purpose of guaranteeing that potato plants resistant to wart disease are truly of a pure and authentic variety, it is forbidden to plant others than those coming from cultivations recognised by the German Agricultural Society, the Bavarian Council of Agriculture, the Chamber of Agriculture of the Saar Basin or from a Chamber of Agriculture of Germany or Poland. (*Nachrichtenblatt für den Deutschen Pflanzenschutzdienst*, Berlin 1934, 14. Jahrg., Nr. 4, S. 42).

(1) Communication from the Lithuanian Legation to His Majesty the King of Italy to the International Institute of Agriculture.

Union of South Africa. — By Proclamation No. 48 of 3 March 1934 the following insects and acarina are declared injurious according to the Law No. 13 of 1925 (Orchard Cleansing Act, 1925): —

Aspidiotus perniciosus, Chrysomphalus aurantii, Chrys. ficus, Lepidosaphes pinnaeformis, Lecanium hesperidum, Carpocapsa pomonella, Ceratitis capitata, Pterandrus rosa, Tetranychus telarius, Bryobia pratensis, Eriosoma lanigerum, Pseudococcus spp. (*The Union of South Africa. Government Gazette*, Pretoria, 23rd March, 1934, Vol. XCV, No. 2180, p. 753).

*** The Law No. 15 (Agricultural Pests Amendment Act, 1934) amends the Law No. 11 (Agricultural Pests Act, 1911) on the registration of nurseries and the sale of plants grown there ; the importation of plants, insects and germs of disease; the campaign against locusts, etc. (*Ibid., Extraordinary*, Cape Town, 26th March, 1934, No. 2181, pp. ii-iii).

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[A description of scale insects belonging to the genera *Aspidiotus, Chrysomphalus, Targionia, Cryptaspidiotus, Aonidia, Parlatoria, Leucaspis, Fiorinia, Chionaspis, Lepidosaphes, Aulacaspis, Diaspis, Discodiaspis* and *Adiscodiaspis*. Noteworthy:— *Aspidiotus abieticola* n. sp. on *Abies cephalonica*; *A. thymbrae* n. sp. on *Satureia thymbra* and *Thymbra capitata* (= *Thymus capitatus*); *Lepidosaphes ulmi-cotini* n. s. sp. on *Cotinus coggygria* (= *Rhus cotinus*); *L. ulmi-oleae* n. s. sp. on *Olea europaea*; *L. ulmi-rosae* n. n. on *Platanus orientalis, Pyrus* spp., *Rosa, Amygdalus* spp., *O. europaea*; *L. conchiformis-ulmi* n. n. on *Ulmus campestris, Celtis australis, Ficus carica, Pistacia terebinthus*; *L. conchiformis-granati* n. s. sp. on *Rhamnus oleoides, Punica granatum*; *L. conchiformis-phillyreae* n. n. on *Phillyrea media*; *L. aegilopos* n. sp. on *Quercus aegylops*; *Discodiaspis suaedae* n. gen. et n. sp. on *Atriplex portulacoides, Salicornia fruticosa, Arthrocnemum glaucum* and *Suaeda fruticosa*.

The plates contain original microscopic drawings; the map shows the localities cited in the text].

KOSTOFF, Dontcho. Inheritance of natural immunity in plants with special reference to breeding of immune varieties. *Zeitschrift für Zuchtung*, Reihe A: Pflanzenzüchtung, Berlin 1934, Bd. XIX, Heft 4, S. 550-576. Literature, S. 568-576.

LEPIK, E. Kartulivähi geograafilisest levimisest ja selle tähtsusest meie kartulikaubandusele. *Agronoomia*, Tartu 1934, XIV aastakäik, nr. 7, p. 270-273, joon. 1-2, kaart 1. Kasutatud kirjandus, p. 273.

[In Estonian, with title and summary in German:— 'Die geographische Verbreitung des Kartoffelkrebses (*Synchytrium endobioticum*)' (p. 291)].

LISANTI, Angelo. I parassiti delle piante. La lotta contro le cavallette in Italia. *Il Giornale d'Italia Agricolo*, Roma, 1934, anno XVII, n. 30, p. 1, 2 figg. [*Dociostaurus maroccanus, Calliptamus italicus*].

LOUREIRO FERREIRA, M. J. Deux cas de pathologie de l'olivier. *Actes du XI^ème Congrès International d'Oléiculture. Lisbonne, 26 novembre-1^er décembre 1933*, Lisboa, Casa Portuguesa, 1933, p. 43-47.

[Yellowing of the leaves of the olive tree probably due to meteorological and physiological causes. The parasitic fungus *Stictis panizzei* is recorded as new to Portugal].

MALENOTTI, Ettore. Esperienze di lotta contro un parassita del pero. *Giornale di Agricoltura della Domenica*, Roma, 1934, anno XLIV, n. 31, p. 303.

[*Stephanitis pyri* effectively controlled by spraying with 'Afidus Grimaldi' at 2 %].

MARTIN, H., SALMON, E. S., and WARE, W. M. Spraying experiments against pear scab. *The Journal of the South-Eastern Agricultural College*, Wye, Kent, 1934, No. 34, pp. 145-154, fig. 1.
[*Fusicladium pirinum*].

MASERA, Enrico. Setticemia nelle larve di *Tenebrio molitor* L. *Rivista di Biologia*, Perugia, 1934, vol. XVI, fasc. III, pp. 509-517, fig. 1. Bibliografia, p. 517.
[A disease caused by a strain of *Bacillus subtilis*].

MASO, S. Red scale control and fumigation. *Hadar*, Jaffa, Palestine, 1934, Vol. VII, No. 7, pp. 174-177, figs. 1-6. Literature, p. 177.
[*Chrysomphalus aurantii*].

MESNIL, L. *Ophiomyia pinguis* Fall. [DIPT. AGROMYZIDAE] nuisible aux endives. *Bulletin de la Société Entomologique de France*, Paris, 1934, tome XXXIX, nº 9, p. 131-136, fig. 1-3. Bibliographie, p. 136.
[Injurious to *Cichorium intybus*].

MIÈGE, Em. Caractères et valeur des blés " punaisés ". *La Terre Marocaine*, Casablanca, 1934, 4me année, nº 56, p. 3-13, fig. 1-2, courbes 1-6.
[*Aelia* and *Eurygaster* spp.].

MINISTERO DELL'AGRICOLTURA E DELLE FORESTE. I progressi dell'agricoltura italiana in regime fascista. Note illustrative presentate al XVI Congresso internazionale di Agricoltura di Budapest. [Roma], 1934, 379 pp., 7 diagr., 52 figg., 1 carta.
[Contains, among others, the following chapters by Achille Mango and Lionello Petri:—
I consorzi di difesa delle coltivazioni (pp. 101-124).
I servizi fitopatologici (pp. 191-205, 1 carta geografica).
At the end of the book is a list of laws and decrees regarding Italian agriture, enacted from 1923 to 1933; also (p. 361) legislative measures for the protection of plants].

MINISTRY OF AGRICULTURE AND FISHERIES. Report on fungus, bacterial and the diseases of crops in England and Wales, 1928-1932. *Bulletin No. 79*, London, 1934, VI + 117 pp., 1 map, 15 figs.

MINISTRY OF AGRICULTURE AND FISHERIES. Specifications and methods of analysis for certain insecticides and fungicides. *Bulletin No. 82*, London, 1934, 10 pp.

MORSTATT, H. Über die Frage der Zunahme der Pflanzenkrankheiten. *Mitteilungen aus der Biologischen Reichsanstalt für Land- und Forstwirtschaft, Berlin-Dahlem*, Berlin 1934, Heft 48, S. 63-72, 2 Fig.

MYERS, J. G. The discovery and introduction of the Amazon fly. A new parasite for cane-borers (*Diatraea* spp.). *Tropical Agriculture*, Trinidad, B. W. I., 1934, Vol. XI, No. 8, pp. 191-195. References, p. 195.
[*Amazonella myersi* = *Metagonistylum minense*].

NATTRASS, R. M. Flax dodder, a recently observed pest in Cyprus. *The Cyprus Agricultural Journal*, Nicosia, 1934, Vol. XXIX, Pt. 2, pp. 41-43, figs. 1-2.
[*Cuscuta epilinum*].

PETRI, L. Micropressa per l'estrazione di succhi da tessuti freschi. *Bollettino della R. Stazione di Patologia Vegetale*, Roma, 1934, anno XIV, n. ser., n. 2, pp. 254-255, 1 fig.

PETRI, L. Sull'arricciamento (court-noué) della vite. *Bollettino della R. Stazione di Patologia Vegetale*, Roma, 1934, anno XIV, n. ser., n. 2, pp. 273-278. Bibliografia, p. 278.

[With summary in English. The A. who since 1911 has made numerous researches into this grape disease, has, in 1929, expressed the opinion that it is a virus disease].

PLAKIDAS, A. G. The mode of infection of Diplocarpon earliana and Mycosphaerella fragariae. *Phytopathology*, Lancaster, Pa., 1934, Vol. 24, No. 6, pp. 620-634, figs. 1 4. Literature cited, p. 634.

REINKING, Otto A. The distribution of banana wilt. *The Philippine Journal of Science*, Manila, 1934. Vol. 53, No. 3, pp. 229-243, pls. 1-5. Literature cited, pp. 241-242.
[*Fusarium cubense*].

RENOUF, Louis P. W. *Zostera* disease on the coast of County Cork, I. F. S. *Nature*, London, 1934, Vol. 133, No. 3372, p. 912.
[The cause of the disease is not indicated].

RIKER, A. J., and HILDEBRAND, E. M. Seasonal development of hairy root, crown gall, and wound overgrowth on apple trees in the nursery. *Journal of Agricultural Research*, Washington, D. C., 1934, Vol. 48, No. 10, pp. 887-912, figs. 1-8. Literature cited, p. 912.
[*Phytomonas rhizogenes, Phyt. tumefaciens* (= *Bacterium tumefaciens*)].

RIKER, A. J., KEITT, G. W., HILDEBRAND, G. M., and BANFIELD, W. M. Hairy root, crown gall, and other malformations at the union of piece-root-grafted apple trees and their control. *Journal of Agricultural Research*, Washington, D. C., 1934, Vol. 48, No. 10, pp. 913-939, figs. 1-2. Literature cited, pp. 937-939.

RISCHKOV, und KARATSCHEWSKI. Ueber die Entstehung von „Fern-Leaf" bei Tomaten. *Phytopathologische Zeitschrift*, Berlin 1934, Bd. VII, Heft 3, S. 231-244, Abb. 1-9. Literaturverzeichnis, S. 244.
[A virus disease].

ROBERT, Paul-A. Les papillons dans la nature. Neuchâtel - Paris, Delachaux & Niestlé S. A., 1934, 405 p., 64 pl. en coul.
[To the series of works for the general public, remarkable not less for the artistic beauty of the edition than for the scientific accuracy of the contents (such as, among others: *Les champignons dans la nature*, by J. Jaccottet and Paul-A. Robert fils, which appeared in 1925, and *Les chenilles de Léo-Paul Robert* with a monographic text by Paul-A. Robert fils, published in 1931), the present volume has been added this year by Delachaux et Niestlé S. A. of Neuchâtel. It is on the same lines and similar in treatment to the second work mentioned above. In this book brief but clear descriptions are given of 64 species of Lepidoptera many of which are well known as injurious to useful plants, cultivated or growing wild. Each description, in which the outstanding points relative to the habits and biology of the species under consideration have not been forgotten, is completed by a very successful colour plate].

ROLFE, Sholto W. Notes on Diplopoda III. Short notes on three injurious millipedes recently observed. *The Journal of the South-Eastern Agricultural College*, Wye, Kent, 1934, No. 34, pp. 258-259.
[*Choneiulus palmatus* injurious to mushrooms; *Blaniulus guttulatus* to peas; *Cylindroiulus londinensis* var. *caeruleocinctus* to strawberry].

RONCORONI, Ettore. Piante e insetti ed alcuni nemici della Battaglia del Grano. (Consorzio obbligatorio provinciale per la lotta contro il maggiolino e la proces-

sionaria del pino nella provincia di Varese). Varese, Tipografia Arcivescovile dell'Addolorata, 1934, 175 pp., 41 tav.
[A popular work containing, among other things, a description of the principal insects which are injurious to wheat and other crops].

SALMON, E. S., and WARE, W. M. The downy mildew of the hop in 1933. *The Journal of the South-Eastern Agricultural College*, Wye, Kent, 1934, No. 34, pp. 107-113. [*Pseudoperonospora humuli*].

SAMOGGIA, A. Reperti morfologici e biologici sul *Trochilium tipuliforme* Clerck (Lepidoptera-Aegeriidae). *Bollettino del Laboratorio di Entomologia del R. Istituto Superiore Agrario di Bologna*, Bologna, 1933-1934, vol. VI, pp. 131-150, figg. I-XII, tav. VI.
[The larva lives on plants of the genera *Ribes*, *Corylus*, *Juniperus* and *Euonymus*].

SANTOS, Eurico. Inimigos e doenças das fruteiras. (Edição da Bibliotéca Agricola d' " O Campo „). [Rio de Janeiro, 1934], 81 pags., 92 figs.
[Contents:—
Capítulo I. — Noções gerais sobre inimigos e doenças das fruteiras.
Capítulo II. — Das diversas fruteiras, seus inimigos e doenças.
Capítulo III. — Insecticidas, fungicidas, modos de aplicaçâo. Luta biológica].

SÉGUY, E. Un *Anthomyide* nouveau parasite des Iris, et note sur les Diptères qui vivent aux dépenses des Iridées. *Bollettino del Laboratorio di Entomologia del R. Istituto Superiore Agrario di Bologna*, Bologna, 1933-1934, vol. VI, pp. 28-32, figg. I-II.
[*Hylemyia servadeii* n. sp. on *Iris germanica*. The list follows of other Diptera living on *Iris* spp.].

SERVADEI, A. Nota su un nuovo Dittero Antomiide (*Hylemyia Servadeii* Séguy) dannoso alle Iridacee del gen. *Iris*. *Bollettino del Laboratorio di Entomologia del R. Istituto Superiore Agrario di Bologna*, Bologna, 1933-1934, vol. VI, pp. 93-114, figg. I-XII, tav. I.
[See also the paper of E. Séguy mentioned above. The insect in question lives not only on *Iris germanica*, but also on *I. florentina* and *I. pallida*].

SERVADEI, Antonio. Aggiunta alla nota su un nuovo Dittero Antomiide (*Hylemyia Servadeii* Séguy) dannoso alle Iridacee del gen. *Iris*. *Bollettino del Laboratorio di Entomologia del R. Istituto Superiore Agrario di Bologna*, Bologna, 1933-1934, vol. VI, pp. 239-241, figg. I-II.

SERVADEI, Antonio. Contributo alla conoscenza dei Tentredinidi (Hymenoptera-Symphyta) delle rose. II. *Arge pagana* Panz. *Bollettino del Laboratorio di Entomologia del R. Istituto Superiore Agrario di Bologna*, Bologna, 1933-1934, vol. VI, pag. 179-208, figg. I-XVIII.

SERVAZZI, Ottone. Sull'arrossamento fogliare del kaki (1ª Nota). *La Difesa delle Piante contro le Malattie ed i Parassiti — Bollettino del Laboratorio Sperimentale (Regio Osservatorio Regionale) di Fitopatologia*, Torino, 1934, anno 11° (XXXIX del Bollettino), n. 4, pp. 122-137, figg. 1-5. Bibliografia, pp. 136-137.
[*Coryneum delleanii* n. sp. on the leaves of *Diospyros kaki*. A Latin diagnosis is given of the new species].

SILVESTRI, Filippo. Rassegna degli insetti dell'olivo del bacino del Mediterraneo. Estratto dagli Atti del XI Congresso Internazionale di Olivicoltura in Lisbona. Roma, Tip. Federazione Italiana dei Consorzi Agrari, 1934, 42 pp.
[A methodical enumeration of the different and numerous insects living on the olive tree to be found in the Mediterranean basin. This survey, showing what is

known at present about these insects and the means of control them, has as its object the statement of questions still needing study and the direction of research towards elucidating their biology and also towards experiments to discover the best means of control.

The work of Mr. Silvestri is followed by two appendices:—

I. — Gli Scolitidi (o Ipidi) nocivi all'olivo, by Dr. Giuseppe Russo.

II. — Contributo alla conoscenza del liotripide (fleotripide) dell'olivo (*Liothrips oleae* Costa), by Dr. Antonio Melis].

SPRAGUE, Roderick. The association of Cercosporella herpotrichoides with the Festuca consociation. *Phytopathology*, Lancaster, Pa., 1934, Vol. 24, No. 6, pp. 669-676, figs. 1-2. Literature cited, p. 676.

STAPLEY, J. H. The apple fruit miner (*Argyresthia conjugella* Zell.). *The Journal of the South-Eastern Agricultural College*, Wye, Kent, 1934, No. 34, pp. 87-92, 10 figs. References, p. 92.

STEINER, G., and BUHRER, Edna M. Aphelenchoides xylophilus, n. sp., a nematode associated with blue-stain and other fungi in timber. *Journal of Agricultural Research*, Washington, D. C., 1934, Vol. 48, No. 10, pp. 949-951, fig. 1.

[*A. xylophilus* n. sp., *Ceratastomella ips*, *C. pini*, *Trichosporium* sp. A description is given in English of the new species].

SUIRE, Jean. Les premiers états d'un Microlépidoptère cécidogène, *Coleophora novella* CHRÉTIEN. *Bulletin de la Société Entomologique de France*, Paris, 1934, tome XXXIX, nº 8, p. 114-116, pl. I.

[On *Atriplex portulacoides*].

TIDDENS, Berber A. Ueber die Wurzelfäule der *Primula obconica* verursacht durch *Thielaviopsis basicola* Ferraris. *Phytopathologische Zeitschrift*, Berlin 1934, Bd. VII, Heft 3, S. 223-230, Abb. 1-4. Literaturverzeichnis, S. 230.

NOTES

XI International Congress of Horticulture. — This Congress will take place in Rome on from 16 to 21 September 1935. It will be divided into eight sections the fifth being devoted to the control of diseases and pests of horticultural plants.

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